

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

Claim 17 (Cancelled)

18. (Currently Amended) ~~The~~ An image processing apparatus, ~~according to claim 17,~~
~~further~~ comprising:

a receiving unit to receive an image of an original image;

an edge detecting unit including a processor to detect edges using a lightness component of said received image, said processor determining whether said edges correspond to folds in the original image;

a selecting unit to select an edge determined by said processor to correspond to a fold in the original image as a specific one of said detected edges;

a correcting unit to correct the lightness component of said selected specific edge; and

an extracting unit to extract an original region included in said image, wherein
said processor determines the edges continuously extending from a first end to a second end of said extracted original region as corresponding to folds in the original image, and

said selecting unit selects one of the edges continuously extending from a first end to a second end of said extracted original region as the selected specific edge.

19. (Previously Presented) An image processing apparatus, comprising:

- a receiving unit to receive an image;
- a converting unit to convert said received image into a lightness image including the lightness component and into a color difference image including a color difference component;
- an edge detecting unit to detect edges in said lightness image using the lightness component;
- a selecting unit to select a specific one of said detected edges, wherein said selecting unit selects as the specific edge an edge that is detected in said lightness image and is also undetected as an edge in said color difference image; and
- a correcting unit to correct the lightness component of the selected specific edge.

20. (Currently Amended) ~~The~~ An image processing apparatus, ~~according to claim 17,~~
~~further~~ comprising:

- a receiving unit to receive an image of an original image;
- an edge detecting unit including a processor to detect edges using a lightness component of said received image, said processor determining whether said edges correspond to folds in the original image;
- a selecting unit to select an edge determined by said processor to correspond to a fold in the original image as a specific one of said detected edges;
- a correcting unit to correct the lightness component of said selected specific edge; and
- an attribute detecting unit to detect attributes of two regions separated by one of the edges detected by said edge detecting unit, wherein

said processor determines said one of the edges as corresponding to a fold in the original image when said detected attributes of said two regions are identical to each other, and
said selecting unit selects said one of the edges as the selected specific edge.

21. (Previously Presented) An image processing apparatus, comprising:

a receiving unit to receive an image;

an edge detecting unit to detect edges in ~~said~~ a lightness image using a lightness component of said received image;

a background luminance value calculating unit to calculate background luminance values of said received image; and

a selecting unit to select a specific one of said detected edges, wherein

said selecting unit selects a detected edge as the specific edge when the background luminance value of a first region of said received image, at a prescribed distance in a first direction from said detected edge, is substantially equal to the background luminance value of a second region of said received image, at the prescribed distance in a second direction, opposed to the first direction, from said detected edge.

Claim 22 (Cancelled)

23. (Currently Amended) ~~The~~ A computer readable recording medium recording ~~the~~ an image processing program ~~according to claim 22, further comprising the step of~~ to cause a computer to execute the steps of:

receiving an image picked up from an original image;

detecting edges using a lightness component of said received image;
determining whether said edges correspond to folds in the original image;
selecting an edge determined to correspond to a fold in the original image as a specific
one of said detected edges;
correcting the lightness component of said selected specific edge; and
extracting an original region included in said image, wherein
said determining step includes the step of determining the edges continuously extending
from a first end to a second end of said extracted original region as corresponding to folds in the
original image, and
said selecting step includes the step of selecting one of the edges continuously extending
from a first end to a second end of the original region as the selected specific edge.

24. (Previously Presented) A computer readable recording medium recording an image
processing program to cause a computer to execute the steps of:

receiving an image picked up from an original;
converting said received image into a lightness image including the lightness component
and a color difference image including a color difference component;
detecting edges in said lightness image using the lightness component;
selecting a specific one of said detected edges, wherein said selecting step includes the
step of selecting as the specific edge an edge that is detected in said lightness image and is also
undetected as an edge in said color difference image; and
correcting the lightness component of said selected specific edge.

25. (Currently Amended) ~~The~~ A computer readable recording medium recording ~~the~~ an image processing program ~~according to claim 22, further comprising the step of~~ to cause a computer to execute the steps of:

receiving an image picked up from an original image;
detecting edges using a lightness component of said received image;
determining whether said edges correspond to folds in the original image;
selecting an edge determined to correspond to a fold in the original image as a specific
one of said detected edges;

correcting the lightness component of said selected specific edge; and
detecting attributes of two regions separated by one of the edges detected by said edge
detecting step, wherein

said determining step includes determining said one of the edges as corresponding to a fold in the original image when said detected attributes of said two regions are identical to each other, and

said selecting step includes the step of selecting said one of the edges as the selected specific edge.

26. (Previously Presented) A computer readable recording medium recording an image processing program to cause a computer to execute the steps of:

receiving an image picked up from an original;
detecting edges in said lightness image using the lightness component;
calculating a background luminance value of said received image; and
selecting a specific one of said detected edges, wherein

said selecting step includes the step of selecting a detected edge as the specific edge when the background luminance value of a first region of said received image, at a prescribed distance in a first direction from said detected edge, is substantially equal to the background luminance value of a second region of said received image, at the prescribed distance in a second direction, opposed to the first direction, from said detected edge.

Claim 27 (Cancelled)

28. (Currently Amended) ~~The~~ An automated image processing method ~~according to claim 27, further comprising the step~~ steps of:

receiving an image picked up from an original image;

detecting edges using a lightness component of said received image;

determining whether said edges correspond to folds in the original image;

selecting an edge determined to correspond to a fold in the original image as a specific one of said detected edges;

correcting the lightness component of said selected specific edge; and

extracting an original region included in said image, wherein

said determining step includes the step of determining the edges continuously extending from a first end to a second end of said extracted original region as corresponding to folds in the original image, and

said selecting step includes the step of selecting one of the edges continuously extending from a first end to a second end of the original region as the selected specific edge.

Claim 29 (Cancelled)

30. (Currently Amended) An image processing apparatus, comprising:

an acquiring unit to acquire an image signal expressing a color original image with three components;

a color space converting unit to perform coordinate transformation of the image signal such that the color original image is expressed by a lightness component primarily representing lightness and by another component; and

a correcting unit to correct the lightness component in a portion of the color original image that (i) is detected as an edge portion in a lightness image that includes the lightness component and (ii) is undetected as an edge portion in a color difference image that includes the other component, so that after correction the ~~relevant~~ lightness component in a portion of the original image is undetected as an edge portion in the lightness image.

31. (Currently Amended) An image processing apparatus, comprising:

an acquiring unit to acquire an image signal indicating an original image;

an edge detecting unit to detect an edge in a lightness image, primarily representing lightness of the original image, as a lightness edge; and

a correcting unit to correct a lightness component in a portion of the original image detected as the lightness edge when a difference in lightness between opposing portions of the original image, each at a prescribed opposing distance from the lightness edge, is smaller than a prescribed threshold value, so that after correction the ~~relevant~~ lightness component in a portion of the original image is undetected as an edge in the lightness image.

32. (Previously Presented) An image processing apparatus, comprising:

- an acquiring unit to acquire an image signal indicating an original image;
- an edge detecting unit to detect an edge in a lightness image, primarily representing lightness of the original image, as a lightness edge; and
- a correcting unit to correct a lightness component in a portion of the original image detected as the lightness edge when two opposing portions of the original image, each at a prescribed opposing distance from the lightness edge, have an attribute of image of said lightness image that is the same, so that after correction the relevant portion is undetected as an edge in the lightness image.